

REMARKS AND ARGUMENTS

The Applicants wish to express gratitude towards the Examiner for the courtesy extended to the Applicants' attorney during a telephonic interview on October 1, 2003. Claims 1-14 are pending in this application and have been rejected. Claim 1 has been amended to recite that the lamination is done by extrusion. The amendment is not a narrowing amendment because the inserted term "by extrusion" makes explicit what Applicant believed implicit in "lamination". Support for such amendment can be found on page 5, paragraph 20, line 2-3. Claim 10 has been amended to recite the thicknesses of both the thermoplastic sheet and the shrink wrap. The amendment is not a narrowing amendment because the inserted thicknesses makes explicit what is implicit in "from about 0.75 to about 6 mils thick". Support for such amendment can be found on page 10, paragraph 33, lines 17-8, page 6, paragraph 25, lines 25-27.

Response to Rejection Under 35 U.S.C. § 102

Claims 1, 3-4, 7-11, and 13-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by *Wynne* (US 5,328,743). The Examiner states:

With respect to claim 1, *Wynne* is directed to making a reinforced shrink wrap 10 that can be used for packaging (Figure 1, column 5, lines 35-36). The reference teaches providing a thermoplastic sheet 18b (column 2, lines 48-51 and 54-56; column 4, lines 16-17), providing a shrink film 12 (column 2, lines 22-25; column 3, lines 35-36), coating both the thermoplastic sheet and shrink film with an adhesive (column 3, lines 5-13), placing a reinforcing grid 16b on the coated thermoplastic sheet (column 3, lines 5-13; column 4, lines 9-16; column 2, lines 31-40), and laminating the thermoplastic sheet and shrink film such that the tie layer 14b having the grid embedded therein is formed between the sheet and film (Figure 1; column 3, lines 5-13).

The reference teaches the adhesive tie layer is preferably a flexible, acrylic-based adhesive (column 4, lines 9-11), which the examiner has equated to be elastomeric; it being noted that the present specification teaches the elastomeric tie layer can be methyl acrylate (p. 8, lines 18-20).

Regarding claims 3-4, the reference teaches the shrink film being highly irradiated polyethylene (column 3, lines 35-36).

Regarding claim 7, the adhesive tie layer will inherently have a lower modulus than the thermoplastic sheet and shrink film since the adhesive is not used in an amount that retards movement of the grid and because the grid sags to prevent tearing (column 2, lines 37-40).

Regarding claim 8, the reference teaches the thermoplastic sheet including multiple plies (column 2, lines 54-55; column 5, lines 10-11).

Regarding claim 9, the reference teaches the tie layer can be 0.75-1 mils (column 2, lines 33-35), which is consistent with that portion of the claimed range.

Regarding claim 10, the reference teaches the thermoplastic sheet and shrink film being from about 0.75-6 mils thick (column 2, lines 24-25 and lines 48-49).

Regarding claims 11 and 13, the reference teaches the thermoplastic sheet and shrink film including additives such as ultraviolet stabilizers, flame retardants, static inhibitors etc. (column 3, lines 16-20 and 25-27).

Regarding claim 14, the reference teaches the shrink film being LLDPE, LDPE, or mixtures thereof (column 2, lines 22-24).

Office Action of September 2, 2003, pages 4-6.

The Applicants have considered the Examiner's reasons in view of the disclosure of Wynne and respectfully disagree. The Applicants reasons are stated as follows.

Anticipation requires that a single reference teach, expressly or inherently, every claim limitation. The Applicants have amended the claims to recite that the method for making a reinforced shrink wrap includes ***laminating by extrusion*** the thermoplastic sheet, the shrink film, and the tie layer. The disclosure of Wynne fails to teach such lamination by extrusion. Thus, Wynne fails to disclose a method of producing a reinforced shrink wrap using extrusion-lamination as recited in claims 1-14. Therefore, *Wynne* does not anticipate the invention encompassed by claims 1, 3-4, 7-11, and 13-14.

Response to Rejection Under 35 U.S.C. § 103

Claims 1-4 and 7-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wynne et al. '743 in view of Ikeda et al. (US 6214476) and Wynne et al. (US5773373; provided in IDS), or alternatively, Ikeda in view of Wynne '743 and Wynne '373. The Examiner states:

With respect to claim 1, it is noted the examiner interpreted Wynne '743 reference to mean that adhesive tie layer was elastomeric. If it is not taken so, it would have been obvious to form/extrude an elastomeric adhesive tie layer that is acrylic based between the shrink film and thermoplastic sheet of Wynne '743 for laminating the same because such is known in the shrink wrap packaging art, as taught by Ikeda (teaches extruding elastomeric adhesive tie layer A between an oriented film (=shrink film) and a thermoplastic layer B; column 1, lines 8-9 and 14; column 4, lines 13-36; column 7, lines 39-48; column 8, lines 51-53; column 11, lines 51-56; column 12, lines 45-50), wherein the adhesive provides a laminate having good mechanical strength and shrinkability (column 1, lines 8-15); especially in light of the fact that it is known to extrude an elastomeric tie layer between thermoplastic layers, wherein one of the thermoplastic layers has a reinforcing grid thereon, such that the grid becomes embedded within the tie layer, as taught by Wynne '373 (Figures 1-2; column 4, lines 11-12; column 6, lines 9-10).

Alternatively, it would have been obvious to place a reinforcing grid on the thermoplastic sheet of Ikeda before extruding the elastomeric adhesive tie layer between it and the shrink film because it is known in the art to have a reinforcing grid embedded within an adhesive tie layer that is sandwiched between a shrink film and thermoplastic sheet, as taught by Wynne '743 (see above) wherein the grid would minimize and contain tears, rips and prevent punctures from spreading (Wynne '743; column 1, lines 35-37).

Regarding claim 2, Ikeda teaches applying the adhesive tie layer by extrusion coating (column 12, lines 45-50), wherein this eliminates the need for separate coating and laminating steps thereby expediting the manufacturing process.

It is noted the present invention can extrude the elastomeric tie layer without affecting the shrink film because the thickness of the tie layer is maintained within the claimed range (p.5, lines 25-28) – a range that is consistent with that taught by Wynne '743 (see paragraph 9 above).

Regarding claims 3-4, Ikeda teaches the shrink film being a polyethylene (column 11, lines 55-62) but it silent as to it being highly irradiated. It would have been obvious to highly irradiate the shrink film of Ikeda because such is known in the art, as taught by Wynne '743 (see paragraph 9 above), wherein this improves the properties of the shrink film.

Regarding claim 7, it would have been obvious for the tie layer of Ikeda to have a lower modulus than the thermoplastic sheet or shrink film because such is known in the art, as taught by Wynne '743 (see paragraph 9 above), wherein this allows the grid to sag and prevent further tearing.

Regarding claim 8, it would have been obvious to use multiple plies for the thermoplastic sheet of Ikeda because such is known in the art, as taught by Wynne '743 (see paragraph 9 above), wherein this would increase the strength of the laminate.

Regarding claim 9, as for the portion of the claimed range from 1-1.5 mils, it would have been obvious to use a tie layer having a thickness within this range for the tie layer of Wynne '743 because the prior art range is close enough that the skilled artisan would have expected the tie layer to have the same effect on the laminate.

Alternatively, it would have been obvious to use a tie layer having a thickness within the claimed range for the tie layer of Ikeda because such is known, as taught by Wynne '743.

Regarding claim 10, it would have been obvious to use a shrink film and thermoplastic sheet having a thickness within the claimed range for that of Ikeda because such is known, as taught by Wynne '743.

Regarding claim 11 and 13, Ikeda teaches the thermoplastic sheet having antistatic agents and pigments (column 11, lines 12-15).

Regarding claim 12, both Wynne '743 and Ikeda are silent as to the tie layer having additives. It would have been obvious to include additives within the tie layers of both because such is known, as taught by Wynne '373 (column 5, lines 64-66), wherein this imparts desirable characteristics to the same.

Regarding claim 14, Ikeda teaches the shrink film can be polyethylene but is silent as to it being LLDPE, LDPE, or mixtures thereof. It would have been obvious to use these types of PE for the shrink film of Ikeda because such is known in the art, as taught by Wynne '743 (see paragraph 9 above), wherein such shrink films provide a quality product.

Office Action of September 2, 2003, pages 6-8.

Claims 5-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wynne et al. '743, Ikeda et al., and Wynne et al. '373, or alternatively Ikeda, Wynne '743 and Wynne '373 as applied to claim 1 above, and further in view of Hendrickson (US 4087577). The Examiner states:

Regarding claim 5, Wynne '743 teaches the grid being a nonwoven filament grid (column 4, lines 14-16) but is silent as to it being a scrim. It would have been obvious to the skilled artisan at the time the invention was made to use a nonwoven scrim because such is known as a reinforcement for heat-shrinkable thermoplastic films, as taught by Hendrickson (Figure 2; column 5, lines 16-21)

Office Action of September 2, 2003, page 9.

To reject claims of an application under 35 U.S.C. § 103(a), an examiner has the burden of establishing an unrebutted *prima facie* case of obviousness. *See In re Deuel*, 51 F.3d 1552, 1557, 34 U.S.P.Q.2d 1210, 1214 (Fed. Cir. 1995). In the absence of a proper *prima facie* case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992). Evidence for rebutting a finding of obviousness may relate to any of the factors for determining obviousness, including secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966); *In re Piasecki*, 223 USPQ 785, 788 (Fed. Cir. 1984). Such rebuttal evidence may include evidence that the claimed invention yields unexpectedly improved properties or properties not present in the prior art, or may consist of a showing that the claimed compound possesses unexpected properties. *In re Dillon*, 16 USPQ2d 1897, 1901 (Fed. Cir. 1991) (emphasis added). Moreover, “[e]vidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a *prima facie* case of obviousness.” *In re Chupp*, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987). Obviousness does not require absolute predictability, however, at least some degree of predictability is required. Evidence showing there was no **reasonable** expectation of success may support a conclusion of nonobviousness. *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976)

The Examiner has stated that either the combination of Ikeda with Wynne '743 or Wynne '373 would render the current claimed process obvious. However, even if the references are combined, there is no reasonable expectation of success. In the present case, the claimed process results in improved properties in the reinforced shrink wrap that are not expected from the prior art.

Specifically, the extruded tie layer of the claimed invention results in unexpectedly high lamination strength values. As shown in Table 1, the 3" Load @ Yield of a shrink wrap made with a tie layer is almost twice that of a shrink wrap made with an adhesive layer.

Table 1

Property	ASTM	Tie Layer	Adhesive Layer
Thickness	D-2103	8.3 mils	6.4 mils
3" Load @ Yield -- MD	D-882	165.0 lbf	89.5 lbf
3" Load @ Yield -- TD	D-882	165.0 lbf	85.9 lbf

In addition, according to the Declaration of Mr. Dennis J. Olheiser (attached as Appendix A), the average peel strength of 5-ply shrink wraps with adhesive layers is only about 25 oz., whereas the average peel strength of 5-ply shrink wraps with extruded tie layers is about 70 oz., a result that is almost **three times** higher. Nowhere does Ikeda or Wynne provide any teaching regarding improved lamination strength values, much less the unexpectedly high lamination strength values that result from the claimed invention.

Appellants respectfully submit that the above showings of unexpected and advantageous properties rebut any prima facie case of obviousness that Wynne, Ikeda or Hendrickson may establish and further support the non-obviousness of the invention.

For these reasons, Wynne, Ikeda or Hendrickson does not anticipate any of the pending claims. The Applicants further submit that Wynne, Ikeda or Hendrickson does not render the pending claims obvious either. Consequently, all pending claims are patentable.

CONCLUSION

Applicants have addressed all of the Examiner's rejections. In conjunction with the claim amendments and arguments above, Applicants believe that the claims are now in condition for allowance and respectfully request that the Examiner grant such an action. If any questions or issues remain in the resolution of which the Examiner feels will be advanced by a conference with the Applicants' attorney, the Examiner is invited to contact the attorney at the number noted below.

No fees are due as a result of this Reply. The Commissioner is hereby authorized to charge

any additional fees which may be required, or credit any overpayment, to Deposit Account No. 10-0447, reference 41836.55USD1(BAI).

Respectfully submitted,
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Appendix A